UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,812	07/22/2003	Richard Clark	019680-005700US	7777

20350   7590   08/04/2006

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER
CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
2628	

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/625,812	CLARK ET AL.
	Examiner	Art Unit	
	Antonio A. Caschera	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2006*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,10-26 and 29-40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,10,12-26,29 and 31-40* is/are rejected.

7)☒ Claim(s) *11 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 May 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1.   Claims 1-7, 10, 12-26, 29 and 31-40 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Dorbie (U.S. Patent 6,545,685 B1) in view of Deering (U.S. Patent 6,771,272

B2).

In reference to claims 1 and 36-39, Dorbie discloses a system and method for

implementing multichannel computer graphics displays requiring the blending of multiple

images (see column 2, lines 55-58). Dorbie discloses:

- defining a luminosity texture having a plurality of luminosity texels (Figures 8-9; col.

  8:31-50);

- converting pixel data for an underlying image to an image texture having a plurality of

  image texels (Figures 8-9; col. 8:31-50);

- blending the image texture onto a target surface having a shape (col. 10:8-36); and

  blending the luminosity texture onto the target surface, thereby generating luminosity

  compensated pixel data for the image (col. 10:8-36).

While Dorbie does discloses the invention implemented dependent upon the geometry of the

display system, supporting arbitrary blend shapes defined by the particulars of the display (see

column 7, lines 45-50), Dorbie does not explicitly disclose providing a user interface to a user

modification of the shape of the target surface. Deering discloses a system and method for

providing improved display capabilities including edge blending, hot spot correction, edge

matching and distortion correction along with others (see column 8, lines 27-31). Deering

explicitly discloses providing a graphical user interface allowing the user to modify the shape of

a target surface (see column 48, lines 51-60 and Figures 24A-B, 25A-B). Deering also discloses

allowing the user to incrementally modify the target surface shape enabling a plus-minus

adaptation signal via the GUI (see columns 48-49, lines 61-13 and Figures 25A-B) which the

Office interprets as inherently automatically updating luminosity values in response to user

modification of the target surface. It would have been obvious to one of ordinary skill in the art

at the time the invention was made to implement the display surface shape modification

techniques of Deering with the image blending techniques of Dorbie in order to provide a display

system that compensates for physical pixel distortions so that rendered graphical objects appear

undistorted on a display screen (see columns 3-4, 61-5 of Deering). Further in reference to

claims 36-39, Dorbie discloses a mass storage device (#407), ROM (#406 of Figure 4) and main

memory (#404) used to store instructions describing how information is to be processed by

processors (see column 6, lines 11-24), which the Office interprets as functionally equivalent to a

computer program product comprising computer code and stored on a computer-readable

medium. Also, in reference to claim 39, the Office interprets that the transmission of instructions

via a network in a carrier signal format is inherent in the art of computers and therefore the

Office interprets the combination of Dorbie and Deering to provide such teachings especially

since Deering discloses implementing multiple graphics processing units across a network (see column 21, lines 44-50 of Deering).

In reference to claim 22, Dorbie discloses a system and method for implementing multichannel computer graphics displays requiring the blending of multiple images (see column 2, lines 55-58). Dorbie discloses:

- a texture generation module configured to convert pixel data for an underlying image to an image texture having a plurality of image texels (Figure 4, Item 411 [431-433]); Figures 8-9; col. 8:31-50; col. 6:24-55);

- a texture memory configured to store the underlying image texture and a luminosity texture having a plurality of luminosity texels (Figure 4; item 436; col. 6:24-55); and

- a multistage texture blending module configured to blend each of the image texture and the luminosity texture onto a target surface having a shape, thereby generating luminosity-compensated pixel data for an image (Figure 4, Item 411 [431-433]); Figures 8-9; col. 8:31-50; col. 6:24-55).

While Dorbie does discloses the invention implemented dependent upon the geometry of the display system, supporting arbitrary blend shapes defined by the particulars of the display (see column 7, lines 45-50), Dorbie does not explicitly disclose providing a user interface to a user modification of the shape of the target surface. Deering discloses a system and method for providing improved display capabilities including edge blending, hot spot correction, edge matching and distortion correction along with others (see column 8, lines 27-31). Deering explicitly discloses providing a graphical user interface allowing the user to modify the shape of a target surface (see column 48, lines 51-60 and Figures 24A-B, 25A-B). Deering also discloses

allowing the user to incrementally modify the target surface shape enabling a plus-minus

adaptation signal via the GUI (see columns 48-49, lines 61-13 and Figures 25A-B) which the

Office interprets as inherently automatically updating luminosity values in response to user

modification of the target surface. Deering further discloses a host module and graphics system

module (see #102 and 112 of Figure 8A) which the Office interprets as operating, or comprising

functionality which operates, functionally equivalent to the user interface module and luminosity

compensation module, respectively of Applicant's claim. It would have been obvious to one of

ordinary skill in the art at the time the invention was made to implement the display surface

shape modification techniques of Deering with the image blending techniques of Dorbie in order

to provide a display system that compensates for physical pixel distortions so that rendered

graphical objects appear undistorted on a display screen (see columns 3-4, 61-5 of Deering).

In reference to claims 2 and 23, Dorbie and Deering disclose all of the claim limitations

as applied to claims 1 and 22 respectively above in addition, Dorbie discloses wherein the target

surface comprises a polygon having a plurality of vertices, at least one of the vertices being

associated with one of the image texels of the image texture (Figures 8-9; col. 8:31-50; col. 10:8-

36).

In reference to claim 3, Dorbie and Deering disclose all of the claim limitations as

applied to claim 1 above in addition, Dorbie discloses wherein the method is further comprising

providing the luminosity compensated pixel data to a display device (col. 3:10-30).

In reference to claims 4, 24 and 25, Dorbie and Deering disclose all of the claim

limitations as applied to claims 3 and 22 above in addition, Dorbie discloses wherein providing

the luminosity compensated pixel data to the display device includes: storing the luminosity

compensated pixel data in a frame buffer; and subsequently scanning out the frame buffer data,

thereby providing data to the display device (Figures 8-9; col. 8:31-50).

In reference to claims 5 and 26, Dorbie and Deering disclose all of the claim limitations

as applied to claims 1 and 22 respectively above in addition, Dorbie discloses wherein each

luminosity texel includes a scaling factor (col. 6:24-55, col. 8:31-44 and Figures 9-10).

In reference to claim 6, Dorbie and Deering disclose all of the claim limitations as

applied to claim 5 above in addition, Dorbie discloses wherein blending the luminosity texture

onto the target surface includes: selecting one of the luminosity texels; and multiplying a pixel

value from the target surface by the scaling factor of the selected luminosity texel (col. 6:24-55,

col. 8:31-44 and Figures 9-10).

In reference to claim 7, Dorbie and Deering disclose all of the claim limitations as

applied to claim 5 above in addition, Dorbie discloses wherein the scaling factors define a

luminosity gradient to be applied across an area of the image (col. 1:61-67; col. 2:1-8; col. 6:24-

55, col. 8:31-44 and Figures 9-10).).

In reference to claims 10 and 29, Dorbie and Deering disclose all of the claim limitations

as applied to claims 1 and 22 respectively above in addition, Dorbie discloses wherein

automatically updating one or more of the luminosity texels includes computing a luminosity

scaling factor based on a distance to a location on the target surface that maps to the texel (col.

7:20-23, col. 8:31-44 and Figures 9-12. In particular, Figures 10 and 12 describe different

methods involving distances to pixel centers on the target surface vs. the amount of brightness to

apply).

In reference to claims 12 and 31, Dorbie and Deering disclose all of the claim limitations as applied to claims 1 and 22 respectively above in addition, Dorbie discloses wherein the luminosity texture includes a low luminosity region (col. 1:61-67; col. 2:1-8; Figures 7-8; col. 7:32 through col. 8:30).

In reference to claims 13 and 32, Dorbie and Deering disclose all of the claim limitations as applied to claims 12 and 31 respectively above in addition, In addition, Dorbie discloses wherein the low luminosity region corresponds to an overlap region in an image to be displayed using a plurality of display devices configured to display overlapping image elements (col. 1:61-67; col. 2:1-8; Figures 7-8; col. 7:32 through col. 8:30).

In reference to claims 14 and 33, Dorbie and Deering disclose all of the claim limitations as applied to claims 1 and 22 respectively above in addition, Dorbie discloses wherein the luminosity texture includes dark texels for forming a visible pattern superimposed on the underlying image (Figures 7-8; col. 7:32 through col. 8:30).

In reference to claims 15 and 34, Dorbie and Deering disclose all of the claim limitations as applied to claims 1 and 22 respectively above in addition, Dorbie disclose the visible pattern corresponding to a message readable by a user (Figures 7-8; col. 7:32 through col. 8:30). Note, in its broadest interpretation the phrase, "a message readable by a user" is seen equivalent to the pattern dots of the edge areas in Figure 7 of Dorbie as this pattern is broadly a message and can be seen by the user.

In reference to claims 16, 35 and 40, Dorbie and Deering disclose all of the claim limitations as applied to claims 1, 22 and 36 respectively above. Dorbie discloses the method further comprising defining the luminosity texture (col. 1:15-67; col. 2:1-51; col. 7: 42-50).

Deering explicitly discloses providing a graphical user interface allowing the user to modify the shape of a target surface (see column 48, lines 51-60 and Figures 24A-B, 25A-B). Deering also discloses allowing the user to incrementally modify the target surface shape enabling a plus-minus adaptation signal via the GUI (see columns 48-49, lines 61-13 and Figures 25A-B) which the Office interprets as inherently automatically updating luminosity values in response to user modification of the target surface.

In reference to claim 17, Dorbie and Deering disclose all of the claim limitations as applied to claim 16 above in addition, In addition, Dorbie discloses wherein saving the luminosity texture to a file (col. 1:15-67; col. 2:1-51; col. 4: 20-37; col. 7: 42-50; Figure 4 discloses the input devices; Figures 8-9; col. 8:31-50; Figure 14; col. 6:24-56). Deering also discloses allowing the user to incrementally modify the target surface shape enabling a plus-minus adaptation signal via the GUI (see columns 48-49, lines 61-13 and Figures 25A-B) which the Office interprets as inherently automatically updating luminosity values in response to user modification of the target surface.

In reference to claim 18, Dorbie and Deering disclose all of the claim limitations as applied to claim 17 above in addition, Dorbie discloses selecting a previously saved luminosity texture file to be applied (col. 1:15-67; col. 2:1-51; col. 4: 20-37; col. 7: 42-50; Figure 4 discloses the input devices; Figures 8-9; col. 8:31-50; Figure 14; col. 6:24-56). Deering also discloses allowing the user to incrementally modify the target surface shape enabling a plus-minus adaptation signal via the GUI (see columns 48-49, lines 61-13 and Figures 25A-B) which the Office interprets as inherently automatically updating luminosity values in response to user modification of the target surface.

In reference to claim 19, Dorbie and Deering disclose all of the claim limitations as applied to claim 16 above in addition, Deering also discloses allowing the user to incrementally modify the target surface shape enabling a plus-minus adaptation signal via the GUI (see columns 48-49, lines 61-13 and Figures 25A-B) which the Office interprets as inherently automatically updating luminosity values in response to user modification of the target surface.

In reference to claim 20, Dorbie and Deering disclose all of the claim limitations as applied to claim 1 above in addition, Dorbie discloses wherein each luminosity texel includes an independent scaling factor for each of a plurality of color components (Figure 9, col. 8:31-50).

In reference to claim 21, Dorbie and Deering disclose all of the claim limitations as applied to claim 20 above in addition, Dorbie discloses wherein the plurality of color components includes a red component, a green component, and a blue component (Figure 9, col. 8:31-50 where red, green, and blue are colors inherently taught by the invention of Dorbie).

Allowable Subject Matter

2.   Claims 11 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In reference to claims 11 and 30, the prior art of record (Dorbie and Deering) does not explicitly disclose utilizing a depth coordinate to represent the location of a distance of luminosity texels on a target display surface, in combination with the further limitations of claims 10 and 29 respectively, from which claims 11 and 30 depend upon.

Response to Arguments

3.   The Office notes the cancellation of claims 8, 9, 27, 28, 41 and 42.

4.   Applicant's arguments, see pages 10-12 of Applicant's Remarks, filed 05/15/06, with

respect to the rejection(s) of claim(s) 1-42 under 102(e), in view of Dorbie have been fully

considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon

further consideration, a new ground(s) of rejection is made in view of Dorbie and Deering.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781.

The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00

AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kee Tung, can be reached at (571) 272-7794.

Any response to this action should be mailed to:

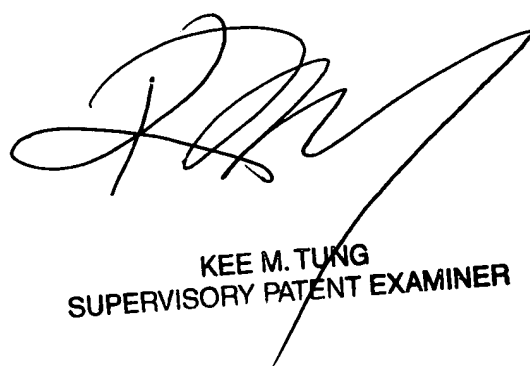Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

PATENT EXAMINER

8/1/06

KEE M. TUNG
SUPERVISORY PATENT EXAMINER